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THE FACTORS INFLUENCING EMPLOYEE' MOTIVATION IN 5S SYSTEM
IMPLEMENTATION CASE STUDY TIRE COMPANY LOCATED
IN EASTERN REGION

BO QINGFU

Burapha University

2022

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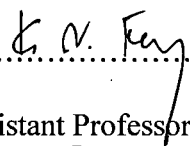
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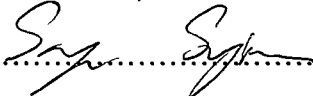
The Independent Study of Bo Qingfu has been approved by the examining Committee to be partial fulfillment of the requirements for the Master of Business Administration Program in Faculty of Management and Tourism of Burapha University.

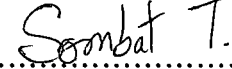
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BO QINGFU : THE FACTORS INFLUENCING EMPLOYEE'

MOTIVATION IN 5S SYSTEM IMPLEMENTATION CASE STUDY TIRE

COMPANY LOCATED IN EASTERN REGION. ADVISORY COMMITTEE:

SARUNYA SANGLIMSUWAN, Ph.D. 2022.

The purpose of the study was to determine the factors that influence employee motivation in 5s implementation in a tire company located in eastern region of Thailand. The study was guided by the following research question: what are factors that influence employee's motivation in 5s implantation in a tire company located in eastern region of Thailand. There are four independent variables including employee involvement, training, top management support, organization culture are selected from the literature reviews. A descriptive research design was adopted, with a famous tire company being focused. The populations for the study were employees of the famous tire company. The study sample comprised a total of 400 employees from different departments. Questionnaires are answered by 400 employees who are willing to take part in the research. Descriptive statistic and inferential statistic such as simple liner regression are employed to analyze data. The results show that there is a high level of employees' motivation in 5S implementation. The findings illustrate that top management support has the most significant influence following by training and organization culture while employee involvement has the least significant influence on employee motivation in 5S implementation.

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CHAPTER 1

INTRODUCTION

Background of the study

In order to stay competitive in an increasingly global marketplace, increase in customer demands and rapid market changes, companies are forced to rethink their manufacturing and management approaches to lower costs, waste reduction, improve productivity and at the same time increase quality (Heizer & Render, 2010). How to improve the performance of companies, more and more companies focused on lean manufacturing effort. Lean manufacturing is a process that improves the standards of the organization which require the cooperation among the workers (Manos & Vincent, 2012). A key element of the lean approach is the 5S tool. The 5S methodology is a very suitable way to start the process of continuous improvement (Carmen, 2013). 5S is developed by Japanese company whose name is JIT Management Laboratory Company Ltd, in Tokyo. 5S system includes five implementations of actions that starts with the prefix letter “S” aimed at the systematic hygiene management. 5S is a tool to eliminate non-add value activity which use new standardized working method.

During the last twenty years, 5S get the great successful from Japan manufacturing company and then transfer all over the world. With the development of tire manufacturing, more and more tire manufacturing companies face the challenges of getting gross profit and earning advantages than competitors. 5S is a method or practice management tool that can help everyone in organization to live in a better working environment (Heizer & Render, 2010). If the organization can implement 5S successfully, it will make organization happen great changes which includes increasing in productivity, quality, safety, maintenance, reduction in cost, achieve customers’ satisfaction, lower setup times and improved employee discipline (Hill, 2009; Samsonova, 2007).

The source of successful 5S implementation comes from employee and commitment from all companies level. Employees play an important role in implementing 5S system no matter they belong to management or non- management. All the companies want to get continual improvement in the factory by all the employee involvement and taking part in implementation of 5S systems. However most of the companies face challenges of barriers when pursuing continuous improvement. Most of the management think that they can't succeed when implementing 5S systems because there are no all involvement culture among employees and they think 5S System is equal to spring-cleaning, no good tools, lack of motivation and evaluation system, and lack of top management support (MESC, 2009). What is the important factors to influence the employee's motivation in implementing 5S system during their work. Beale (2007) thought that employee' motivation is essential to implement 5S system. Motivating employee can ensure organization to get benefit from all employee involvement, such as providing first class customer service and establishing a standard of performance.

Research problem

As many organizations attempt to become "World Class Manufacturing" operations, where to begin their lean journey is the first question facing management. The answer is simple which is by implementing 5S System (Auja & Khamba, 2008; Ansari & Modarres, 1997; Czapke, 2007; Wong, Wong & Ali, 2009). The effectiveness of 5S System is shown by its popularity in Japan where the concept has been introduced mainly in the manufacturing industries (Pheng, 2001). Additionally, 5S System can influence quality improvement without incurring high costs in their implementation that is needed by every manufacturing firm which have been awarded by ISO compliance (Low, 2000a; Low, 2000b; Low, 1999).

A company that has implemented 5S comprehensively displays a level of orderliness and clarity than other companies have not considered. It is doomed to fail

that a half-hearted commitment to 5S. Most of the manufacturing firms carry out 5S System however it is not an ongoing process and inconsistency (Bamber, Sharp & Hides, 2000; Pillet & Maire, 2008). As all knows, employees at all levels are the main part of implementing 5S System. Samsonova (2007) summarized results from a number of interviews which indicate that lack of motivation is one of the factors that hinders successful implementation of 5S System. It is not accepted that 5S can help employee to improve their work performance. 5S System was not being fully utilized and it had been abandoned by employees (Gomez, Byers, Stingley, Sheridan, & Hirsch, 2010). Employee thought that 5S only related to committee but did nothing to do with them. They thought 5S system is a burden to them and rejected to it (Bo, 2008). Furthermore, it is difficult to promote 5S practices as a culture in an organization especially in manufacturing firm due to the fact that employees lack understanding on the meaning of 5S System (Rahman, Khamis, Zain, Deros, & Mahmood, 2010).

The 5S system implementation in manufacturing firm has so many research reviews but there is less research on awareness of employees' motivation in implementing it. This has caused the organizations to identify the important factor needed to ensure the successfulness of 5S System with the involvement of all workers. The present study has selected employee involvement for 5S, training for 5S, top management support for 5S, organization culture for 5S to be examined as determinants or factors in influencing employees' motivation in implementing 5S System. I select these four independent because they have high relationship with our company 5S implementation situation. Firstly, our company management team has been training employee to implement 5S system in daily work. When headquarter internal audit team comes to Thailand, they always audit whether management team have trained employee as headquarter required. Secondly, top management team has asked lean management division which top management support can help implement 5S system successfully many times. Thirdly, our company invites 5S professional

teacher to explain the importance of organization culture of continuous quality improvement. Fourthly, many employees think that 5S implementation is not related to them and it is only related to the company. Last but not least, if we select these four independent variables to research and get the factors to motivate employees, we don't need to invest so much and get continuous quality improvement.

Research question

The research question of this study is:

What are factors influencing employee's motivation in implementing 5S system? Case study tire manufacturing company located in eastern region of Thailand.

Research objective

The research objective detail information as follows:

1. To investigate the effect of employee involvement on employee's motivation in 5S implementation.
2. To investigate the effect of training on employees' motivation in 5S implementation.
3. To investigate the effect of top management support related on employees' motivation in 5S implementation.
4. To investigate the effect of organization culture on employee' motivation in 5S implementation.

Significance of study

Implementing 5S system successfully will make company develop continuous improvement and manage hygiene effectively and efficiently. If the tire company can acknowledge the factors influencing employees motivation when implement 5S system, it can make the company motivate employee in 5S

implementation. At the same time, the company can satisfy customer's requirement and reduce lead-time from customer issuing purchase order to manufacturing just in time.

The result of the study will use to improve the performance of the organization. By making full use of factors influencing employees' motivation, the organization will eliminate the barriers to implement 5S system successfully.

The research results will be used as tools for the follower researchers continue to research the factors influencing employee's motivation in 5S implementation.

Research hypothesis

H1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H2: training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Framework of the research

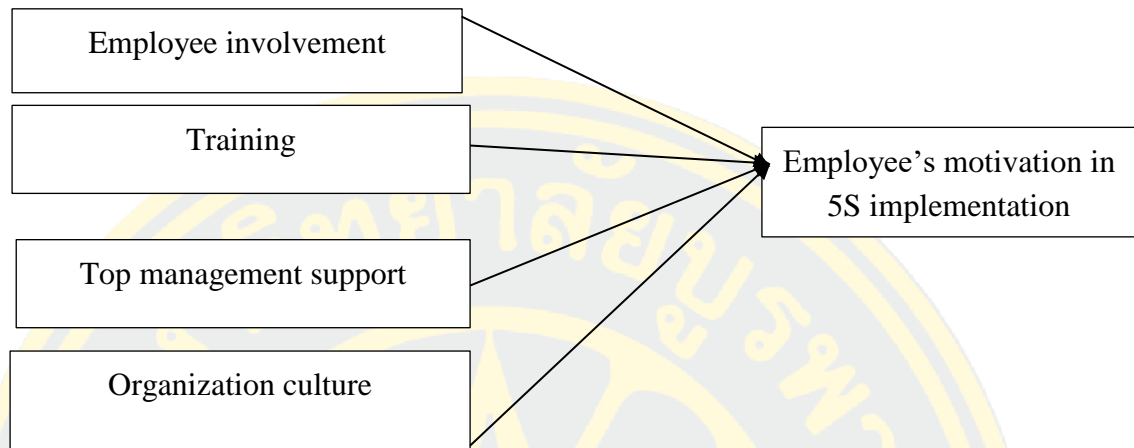


Figure 1 Framework

Definition of the term

Employee motivation for 5S has been defined as an inner drive and intention that causes employee to do something or get a certain way to implement 5S system.

5S defined “the five Japanese words to sort, set in order, shine, standardize and sustain”. Elements in 5S practices will ensure a neat, safe and comfortable working environment if employees consistently apply it at the workplace. Five components in 5S practices are:

Seiri or sort out means removes unnecessary equipment or material and organize the material according to its category.

Seiton or set in order means setting the work in an appropriate order to improve the efficiency of completing the work.

Seiso or shine means keeps the workplace including equipment and material clean and remove unwanted components.

Seiketsu or standardize means establish a set of standard of ways for work activities in an organization. So that, employees can achieves organization goals.

Shitsuke or sustain means maintaining the 5S culture and ensure employees

implementing in their daily work.

Employee involvement for 5S refers a method in which employee of the organization is encouraged to use their capability and knowledge of 5S to implement 5S program. Employee Involvement in the 5S Program at Workplace includes top management support, Department's initiatives, Recognition, Passion, Facilitator roles.

Training for 5S refers to a planned and systematic effort to modify or develop knowledge and skill to achieve effective performance in 5S implementation. In the implementation of 5S in an organization, every employee, from lower to top management requires training in 5S philosophies and techniques.

Top management support is defined as the degree to which top management understands the importance of the 5S implementation and is personally involved in 5S implementation. Top management support includes provides resources for employee, structural arrangement for employee, empower, delegating, commitment and guide for employee.

Organization culture refers to a system of shared meaning held by members that distinguish the organization from other organizations. The elements of corporate culture can be interpreted as follow: innovation and risk-taking, attention to detail, outcome orientation, people orientation, team orientation aggressiveness, stability.

CHAPTER 2

LITERATURE REVIEW

This chapter will study on the employee's motivation theory model and 5S implementation process. This research will study the factors influencing employee's motivation in 5S implementation.

1. 5S concept and implementation
2. Employee motivation
3. Employee involvement
4. Training
5. Top management support
6. Organization culture

5S Concept and Implementation process

5S is the Japanese term used in manufacturing and production industries for implementing the best technique for production as well as 360-degree development of industry for making product almost defect free (Mali & Bhongade, 2018). 5S is a philosophy and a methodical approach to organize work and cultivate work practices in order to improve productivity and efficiency by keeping the workplace, clean, sorted and organized. It involves five steps, as the name suggests. These are named after Japanese terms Seiri, Seiton, Seiso, Seiketsu, and Shitsuke (Jaca, Viles, Paipa-Galeano, Santos, & Mateo, 2014). Recent studies have focused on several key demographic variables that influence the implementation of lean methods including the 5S tool (Benjamin, 2012; Naqvi, 2013; Barraza & Pujol, 2012; Moriones et al.; Todorova, 2013). The most promising variables that may affect 5S implementations include: Manufacturing tier level, number of employees at plant, job title of study respondents, degree of utilization of work teams, amount of 5S training, months of

lean usage, level of management commitment, level of communication within the plant, degree of personal responsibility exhibited by employees, degree of utilization of an implementation plan, and availability of implementation resources.

Seiri (Sort) refers to the practice of going through all materials, tools, machines, etc., in the work area, identifying needs and unneeded items from them and keeping only the essential/needed items. When Sort is implemented in the workplace, the work area will be more apparent, and leading to a highly efficient workflow, at the same time the workers will be more satisfied with their environment. Employee morale would increase as junk items or materials that are potential health hazards are identified and removed (Patel & Thakkar, 2014). In 5S, it means removing from the shop floor where the items that the workers do not use routinely (Malmbrandt & Åhlström, 2013).

Seiton (Set-in-Order) deals with organizing the items that are needed in a way that best supports the employees doing the work. It is the second step after implemented “Sort” (Agrahari, Dangle, & Chandratre, 2015). Place things in such a way that they can be easily reached whenever they are needed. Set is the way to make the items look neat and reduce the time for searching the tools (Jain, Bhatti, & Singh, 2014). Set in Order focus on setting all the items in the industry into a certain place where the workers can simply find them. Manufacturing industry usually has many different tools and items, and that is the reason to set in order plays an important step to help the personnel save time to gather the items they need (Hung Lin, 2011).

Seiso (Shine) step includes activities like cleaning workplace, maintaining its appearance and using preventive steps to keep the workplace clean (Agrahari, Dangle, & Chandratre, 2015). Cleaning must be done not just after working shift, but apply on a regular schedule to remove dirt and dust from the workplace (Gupta & Jain, 2015). In other word, it is a way to notice problems early and to keep work areas and equipment in good operating condition even more to extend the duration. According to Marley and Ward, the idea for this stage is to have production operators

clean their own workplaces at shift end, so that they notice details like spills, frayed cables, or broken lamps instead of just making the items become shine and bright.

Seiketsu (Standardization) is to create best practices and to get each team member to establish best practices the same way. According to Naqvi (2013), this step focuses on identifying the best process in order to sustain the improvements and also continue to bring further improvements. Keeping standardization in industry workplace will helps in increasing the safety and meanwhile, reduction of the industrial pollution (Patel & Thakkar, 2014). Standardization is the way to keep the first three S, and make it as a standard method. Standardization also brings three S into regular work duties.

Shutsuke (Sustain/ Self Discipline) for every worker and manager has to follow the procedures in the work place and workshop with utmost sense of discipline and sincerity in following the principles and procedures. Sustain/Self Discipline is the final step in the entire 5S system, but also is the hardest step for 5S. The Sustain step is the most difficult because it requires continued diligence. Suarez and Ramis (2012) explained that if 5S implementation failed in the middle way, it was due to the company never completed 5S implementation. On the other hand, if the organization implements 5S completely, a 5S program will have longevity (Agrahari, Dangle, & Chandratre, 2015).

Employee motivation

Motivation has been known amongst scholars to have its root in psychology but has developed in various fields over the years; the term motivation is used in the fields of communication, sociology, education, and human management (Juneja, 2015; Souders, 2020; Shahzadi et al., 2014; Motoi, 2017; Oke, 2018; Harris, 2011; Chitrao, 2014). Employee' motivation is an important factor in deciding success or failure of the organization (Barrs, 2005). Company's profit, high level service morale, production capacity cannot come true without motivated employees. Employee is a

bridge of competition, so company should invest in effective measures to motivate employees. It is the manager's problems not employees' problem when employees not motivated to work. Employee lacks of motivation because unsatisfactory reward and recognition, manager's inability to communicate their goals, poor training program, poor feedback and appraisal from organization and lack of top management support (Robbins, 2003; Fried & Slowik, 2004).

For this present study, the theory that had been chosen is Need Theories (Maslow's Need Hierarchy Theory and Alderfer's ERG Theory). The reasons of choosing these theories to be referred because firstly, employee involvement, training, top management support and participate culture in workplace are some of the needs that employee required. Besides that, the needs that makes a person motivated is about what a person wants and about his or her emotional state, which drives him or her in the direction to achieve organizational goals (Freemantle, 2001). The second reason is that the motivation is highly related to the satisfaction of an employees' in implementing any activities or system in an organization (Locke & Latham, 1990). Satisfaction occurs when needs are fulfilled, and motivation is the attempt to satisfy need (Aldag & Kuzuhara, 2002).

Discovering what motivates employees is one of the most challenging aspects for management in implementing 5S (Bryar & Walsh, 2002). Unfortunately, there is little research on how to motivate employees in practicing 5S System as their work culture. Employees' motivation is influence by the management, environment and the employee himself or herself (Govindarajulu & Daily, 2004). According to Lukman, Aziz and Zakaria (2009), employees should be motivated to participate in any activities related to 5S System in the organization.

Lukman, Aziz and Zakaria (2009) have developed a theoretical model of employees' motivation in implementation of 5S System. This model will help to understand the factors that contribute to the success of 5S implementation. There are four independent variables which influence employees' motivation in implementing

5S System, including organizational culture, management role, training, and employee involvement. The results of the study revealed that organizational culture for 5S, management role for 5S and training for 5S have a significant relationship with employee motivation but insignificant for the employee involvement for 5S. Zulkarnain and SitiHawa (2019) have studied that organizational culture, top management support, employee involvement and training had a significant relationship with employees' motivation in implementing 5S system. I select these four independent because they have high relationship with our company 5S implementation situation. Firstly, our company management team has been training employee to implement 5S system in daily work. When headquarter internal audit team come to Thailand, they always audit whether management team have trained employee as headquarter required. Secondly, top management team has asked lean management division which top management support can help implement 5S system successfully many times. Thirdly, our company invites 5S professional teacher to explain the importance of organization culture of continuous quality improvement. Fourthly, many employees think that 5S implementation is not related to them and it is only related to the company. Last but not least, if we select these four independent variables to research and get the factors to motivate employees, we don't need to invest so much and get continuous quality improvement.

Employee involvement

Employee involvement has been defined in different ways by various authors. According to Kumari (2014), employee involvement is the process of by which employees are empowered to partake in managerial decision making and improvement activities suitable to their ranks in the organization. Agyeman (2012) see employee involvement as a management viewpoint on how to enable the employees to contribute to organizations' continuous improvement and success. Employee involvement is the degree to which employees are recognized from their work,

actively participate in it, and consider their performance important to their self-esteem. Sofijanov and Zabijakin-Chatleska (2013) refer to employee involvement as the participation of employees in decision making and problem solving, and increase autonomy in work processes. Employee involvement can be defined as a condition in the fulfillment of pervasive and positive affective motivation (Pohl & Galletta, 2017).

Employee involvement factors for 5S which includes top management support, department's initiatives, recognition, passion, facilitator role contributes to the Successful Implementation of 5S Practices. According to Orgambidez-Ramos and de Almeida (2017) employees who have been involved will consider the work being done to have a certain meaning and meaning that can show better performance related to the job. Then after this is assessed positively, they can experience a greater level of satisfaction. In addition, Pohl and Galletta (2017) stated that employees reach their best level when they can be involved in their work. When they have reached this position, employees can improve their performance and increase their job satisfaction. Studies by Obiekwe (2018) noted that employee involvement leads to organizational survival and effectiveness.

Mehraetal (2015) have identified the various barriers to implement 5S system successfully such as lack of awareness of 5S, lack of strategic planning of 5S, lack of employee commitment, resistance to change and adoption, lack of cooperation/teamwork, lack of motivation, inability to change organizational culture, non – clarity of organization policy and 5S program. In order to have a dedicated and committed employee towards the implementation of 5S programs, the top management levels need to be proactive in introducing and promoting the importance of exercising 5S practices among their subordinates (Goetsch & Davis, 2010; Fotopoulos & Psomas, 2010; Govindarajulu & Daily, 2004). The studies by Kumar Attri (2016); Moradlou (2017) identified some common barriers in the implementing of 5S namely management involvement, employee motivation. The studies by Landeghem (2011); Houti (2019); Dat MINH (2018) identified the critical success

factor for 5S tools as Top management involvement, middle management involvement, employee involvement, standard for evaluation and key performance indicator. Orgambídez-Ramos and de Almeida (2017) states that employees who are involved in their work will experience a greater level of employee motivation. In Ding and Shen's research (2017) indicate that employee involvement (Group Support, Participation in Decision-Making, Task Interdependence) has a positive and significant effect on employee motivation in the operations and maintenance division of PT. Research by Fernández-Salinero et al. (2020) states that employee involvement positively affects employee motivation. With this statement, it will be necessary to be able to explore the interaction between employee involvement and its effect on employee motivation. Employee involvement will influence employees to be involved which in turn can affect the increase in employee motivation. In line with previous research Zulkarnain and SitiHawa (2019), we propose a similar relationship between employee involvement and employees' motivation in 5S implementation. This results in the following hypothesis:

Hypothesis 1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Training

The term 'training' is often used casually to describe almost any effort initiated by organizations to foster learning among its members (Bohlander, Snell, & Sherman, 2000). Based on Mathis and Jackson (2003), training is a process whereby people acquire capabilities to aid in the achievement of organizational goals. According to Hashim (2001), training refers to a planned and systematic effort to modify or develop knowledge and skill to achieve effective performance in an activity or range of activities. A study by Khan et al. (2014) concluded that organizations that have excellent training plans for employees could improve employee job motivation.

Khan et al. (2014) showed a strong relationship between internal training in the companies surveyed and employee motivation to work. All organizations that wish to improve their employee motivation must focus on employee training. Training provides chances to employees, growth and enhances their knowledge and skills for effective development (Kabir, 2011). According to Mak and Sockel (1999); Ranft and Lord (2000) as coded in Acton and Golden (2002), company commitment to the training needs of its employees positively influences employee satisfaction, which leads to an increase in employee motivation.

In the implementation of 5S in an organization, every employee, from lower to top management requires training in 5S philosophies and techniques. There are two ways providing 5S training, which are internal and external ways (Khamis et al., 2009). For the external training, organization need send their employees to 5S System seminars and workshops. Additionally, for the external training, organizations send their employees to 5S System seminars and workshops. By sending them to seminars and workshops, the person involved become valuable to the organizations and will benefited organizations in long term. For the internal training, it includes training from other experienced people, having commitment in the projects, job sharing, task rotation and individual guidance. As stated by Oheocha (2000), the 5S training plays an importance role to introduce and to promote its used as primary technique to enhance continually improve housekeeping, quality, health and safety and environmental performances. Besides that, the 5S training must target the participation of all employees to ensure they understand, implement as well as able to produce visible results. Additionally, it is useful to an organization because the image of poorly equipped, low morale among employees and badly maintained organization can be reduce (Negros Oriental, Provincial Hospital, 2001). Thakkar et al. (2014) studied on topic of Review on Implementation of 5S in Various Organization". The paper explains the methods & techniques of 5S use to increase the efficiency of all processes in the company. Research have shown that very essential is training of the

workers about the 5S rules. After employees are training to learn 5S knowledge, the organization will benefit in long term. Ghodrati et al. (2012) studied on topic of “A Review on 5S Implementation in Industrial & Business Organizations”. Conclusion said that significant barrier is the space between managerial level & shop floor employees, poor training and awareness of 5S. It is also concluded that 5S key of success is employee training. 5S implementation is not possible without proper training & employees are not capable to actively standardize the 5S.

Company give employees the chance of training 5S system to motivate the employees to involve the implementation of 5S system. Training of employees make them feel satisfied and then lead to increase in employee motivation. Noni et al. (2011), in their paper came out with some factors that influenced the employees motivation in implementing 5S system that are significant were there was a positive relationships between training for employee and employee motivation in 5S implementation. Zulkarnain and SitiHawa (2019), indicated that training had a significant relationship with employees’ motivation in implementing 5S system. In line with previous research Zulkarnain and SitiHawa (2019), we propose a similar relationship between training for employee and employees’ motivation in 5S implementation. This results in the following hypothesis:

Hypothesis2: training has a significantly effect on employees’ motivation in 5S implementation in a tire company located in eastern region of Thailand.

Top management support

McMahon (2013) research that the role of management to support 5S efforts is a crucial factor on the success on proper implementation. Management needs to view the benefits and invest the resources to support a manufacturing environment that adopts 5S. Boonstra (2013) develop the framework of top management support by exploratory research cited the top management support as a multidimensional construct. Top management support for employee includes provides resources for

employee, structural arrangement for employee, empower, delegating, commitment and guide for employee.

A case study specifically on one of the lean tools by Oheocha (2000) at Cooke Brothers Ltd focus on effective implementation of 5S depends upon commitment by management at top level and total involvement of staff at all levels within firm. However, his study also shows that a firm's culture, communication and employee attitudes are the factors that influence success or failure in the use of the 5S System. According to two researchers conducted by Govindarajulu and Daily (2004), employees always follow management's direction. In addition, based on his study stated that whatever management does, in what direction they push and how hard they push dictates where a company actually goes. It becomes a major issue, which many organizations failed to accomplish their goals especially in implementing 5S System because of the reluctance of top management in delegating some authorities and empower employees (Minjoon, Shaohan, & Hojung, 2006). Thus, when a firm attempts to implement a planned change, employees at all levels are more likely to invest time and effort in the change program if that program has the full and credible support of top management (Rouibah, Handy, & Al-Enezi, 2009). In order to make the 5S work the top management has to give its full support to practice this activity in their company. Based on the observations conducted by Khamiset al (2009), top management of this company is not supporting the 5S practice and the reason given by them is the amount of the time and money that would be required to implement the proposed.

Most past studies have revealed that the successful transformation of any quality movement programs within organization is solely dependent on the role of the top management. According to the research done by Calisir (2007), the obligation of the top management is to enhance company's reputation, create inter personal relations and motivate employees. Without the top management support, employees in the organizations are unlikely to change. Top Management Support to employee

motivation becomes a major issue to accomplish their goals in implementing 5S System. The studies by Hama Kareem (2017) identified the biggest barrier in implementing 5S at workplace is lack of employee motivation from top management support. If top management does not support the employee to take part in 5S implementation, the program will not take off. When people don't understand 5S, the resistance to change and forced activities will result with lack of motivation to maintain 5S. Rogovsky and Xubiao (2007) has cited that top management responsible for formulating 5S implementation objectives, evaluates implementation results and can guide company in implementing 5S system. Houti (2019) hinted that the success of implementing 5S depends on management, resources and organization. Motivation from employee is a big stimulant to good 5S practice. The previous finding indicated that top management support had a significant relationship with employees' motivation in implementing 5S system (Zulkarnain & SitiHawa, 2019). In line with previous research Zulkarnain and SitiHawa (2019), we propose a similar relationship between top management support and employees' motivation in 5S implementation in a tire manufacturing company. This results in the following hypothesis:

Hypothesis 3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Organization culture

Schein in Robbins and Judge (2013) provides a definition for organizational culture as a system that shares meaning together that is firmly held by each member of an organization and becomes a differentiator between an organization and another. Based on the theory put forward by O'Reilly et al. in Robbins and Judge (2013) related to organizational culture, there are seven dimensions regarding organizational culture, which are: attention to detail, namely the extent to which an employee is expected to be able to provide work while paying attention to accuracy, analysis and

detail, innovation and taking risks, namely the extent to which an employee is required to be innovative and dare to take risk, result orientation, namely the degree to which company management is able to focus on the results rather than the methods and processes used, human orientation, namely the extent to which decisions made by management are based on considerations of the impact that will arise on team members within the organization, team orientation, namely the degree to which a work activity can be managed as a group compared to individual people, aggressiveness, namely the degree to which everyone acts aggressively and competitively rather than just being calm and observing, stability, namely the degree to which organizational activities are carried out to maintain the status-quo between comparisons and growth.

Organization culture for 5S in a tire company refers to the right way in which 5S system are implemented or 5S implementation problems should be understood in the organization. The tire company has developed employee's habits to implement 5S in the right way and trained employee to solve 5S problems correctly. The tire company has always tried their best to develop organization culture for 5S, which will make the company get continual quality improvement. The lean management division of the tire company puts the quality improvement on the first place and encourages employee to take part in quality improvement by 5S implementation. The tire company has developed open working environment of 5S, salary and reward of 5S, empowerment of 5S and leadership style of 5S to motivate employee implement 5S successfully.

Past research also suggests that cultures which emphasize teamwork and value human interactions are strongly related to high job satisfaction (San Park & Hyun Kim, 2009). Thuy Dung PHAM THI, Anh Tin NGO, Nam Tien DUONG, Van Kien PHAM (2021) studied that organizational culture (including open working environment; salary and reward; empowerment; leadership style; corporate values) has a positive influence on employee motivation. It should be noted that

organizational culture is intangible and plays an important role in behavioral outcomes such as job satisfaction and commitment (Pawirosumarto et al., 2017; Soomro & Shah, 2019); it is crucial that organizations should take the impact of organizational culture on their employees' motivation into consideration. Yanto & Aulia (2021) studied that Organizational Culture has a significant effect on Work Motivation. The previous finding indicated that organizational culture had a significant relationship with employees' motivation in implementing 5S system (Zulkarnain & SitiHawa, 2019). In line with previous research, we propose a similar relationship between organization culture and employees' motivation in 5S implementation in a tire manufacturing company. This results in the following hypothesis:

Hypothesis 4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

CHAPTER 3

RESEARCH METHODOLOGY

This study was a survey study aimed to discover the four factors effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand: the researcher has determined the following methods of research.

1. Research design
2. Population and sample group
3. Developing research instrument and quality of research instrument
4. Construction of reach tool
5. Data collection
6. Data analysis

Research design

The research will outline a plan to conduct a quantitative approach. The researcher make survey questionnaires through online and distributed questionnaires to participants with the purpose of collecting raw data online in time, so as to explore factors employee involvement, training, top management support and organization culture effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. The research will use descriptive statistic, inferential statistics such as simple linear regression, which is statistical, evaluate the collected data whether independent variable influenced dependent variable.

1. Independent variable

Base on the literature review above, this research contains one theory model: employees' motivation in implementation of 5S System; as this research design for employees' motivation in 5S implementation in a tire company located in eastern region of Thailand, the new model include four independent variables (IDPT):

IDPT1: employee involvement

IDPT2: training

IDPT3: top management support

IDPT4: organization culture

2. Dependent variable

This research only studies one dependent variable which comes from the motivation theory that study the employees' motivation in 5S implementation; in this research will conduct the dependent variable (DPT): employees' motivation in 5S implementation, also the final purpose of the research.

DPT: employees' motivation in 5S implementation

Population and sample group

The population of the study is the Thai employees from one famous tire company which located in Eastern Region of Thailand. The tire company is implementing 5S system and hoping to get continuous improvement by implementing it successfully.

1. Sample size

The sample is based on a non-probability convenience sampling method. Sample is the process to select a few of unit to study the characteristic of population. The sample process will focus on sample size, sample techniques and sample location. For this research, the sample will be selected from all the department and sample size will be determined by the sample size formula of Cochran, WG 1963. The researcher selects sample size by determining the confidence level of .95 and the level of error .05. The format for calculating sample size as follow:

$$N = p (1-p) Z^2 / E^2$$

N - Sample size

P - The proportion of population which researcher determined is .500

Z - the level of belief which researcher determined is 1.96 when the level of

confidence is .950

E-The level of error .050

After calculating $N = 384.160$, so the research selects 400.00 employees among Thai employees in the tire company. The research selects 400.00 employees which is not less than 384.16, so sample size is appropriate to collect information by using questionnaires among the tire company employees.

2. Sample selection

The sample scope of this research is employees who work for a tire company, whose department includes sale and marketing, research and development, production, admin, finance, sale service, information and technology, logistics. Because production employee is separated to two shift which is day shift and night shift, so all the questionnaire of production department will be sent to employees online by first line manager and make sure all the employees have chance to answer this questionnaire especially for night shift employees. After the questionnaire is answered by employees, the first line manager will help to collect the questionnaire and feedback to the researcher and make sure all the questionnaire can be collected 100.00%.

Simple random sampling method will be used in sample selection process. The quantity of the sample is allocated by the number of employees in every department. I will send questionnaire online address to the manager of the department and let them help me send to their employee randomly. In order to make sure employee answer the questionnaire accurately, the manager can not disturb the real meaning of the employees. I will collect questionnaire results online by myself after department tell me their employee have finished questionnaire online.

Research Instrument

In this study, a self-administered questionnaire will be designed, the questionnaire includes two sections, the first section is Respondent Profile and second section is separated to two parts: the first part is employee involvement for the 5S, Training for the 5S, organization culture for 5S, Top Management Role for 5S. The second part is employee motivation in implementing 5S. All the items of questionnaires will be valued by Five Likert scale which range from strongly disagree to strongly agree.

Table 1 Summary of questionnaire design

Section	No. of Questions	Questions	Scales used
PART 1	6	Demographic profile	Nominal and ordinal scales
PART 2	25	Independent and dependent variables question	Interval scales

3. Sources of the questions

Table 2 Sources of the questions

Variables	Items	Descriptions	Sources
Employee involvement	1.1	I think top management support of 5S have influence on my involvement to implement 5S system.	Adapted and modified from Geots & Davis (2010)
	1.2	I think Department's initiatives have influence on my involvement to implement 5S system	
			Werner & DeSimone (2009)

Table 2 (Cont.)

Variables	Items	Descriptions	Sources
	1.3	I think Recognition of 5S have influence on my involvement to implement 5S system.	Hassan, Argia and Aziah (2013)
	1.4	I think passion have influence on my involvement to implement 5S system.	
	1.5	I think facilitator roles have influence on my involvement to implement 5S system.	
Training	2.1	The internal training of other experienced individuals has influence on my motivation to implement 5S system.	Adapted and modified from The ways of training for 5S Adapted from Khamis et al. 2009
	2.2	The internal training of job sharing has influence on my motivation to implement 5S system.	
	2.3	The internal training of task rotation has influence on my motivation to implement 5S system.	
	2.4	The internal training of individual guidance has influence on my motivation to implement 5S system	
	2.5	The external training of sending employee to 5S system and seminars and workshops has influence on my motivation to implement 5S system	

Table 2 (Cont.)

Variables	Items	Descriptions	Sources
Top management and support	3.1	Top management provides resources for employee have influence on my motivation to implement 5S system	Adapted and modified from top management support adapted from Boonstra (2013)
	3.2	Top management structural arrangement for employee have influence on my motivation to implement 5S system.	
	3.3	Top management empower employee have influence on my motivation to implement 5S system.	
	3.4	Top management delegating some authorities have influence on my motivation to implement 5S system.	
	3.5	Top management commitment for employees have influence on support of 5S implementation;	
	3.6	Top management guide for employee have influence on my motivation to implement 5S system.	
Organization culture	4.1	I think innovation and courage for employee have influence on my motivation to implement 5S system.	Adapted and modified from Elements of Robbins and Judge (2013)
	4.2	I think employee orientation have influence on my motivation to implement 5S system.	

Table 2 (Cont.)

Variables	Items	Descriptions	Sources
		I think team orientation have influence on my motivation to implement 5S system. I think paying attention to details have influence on my motivation to implement 5S system.	
Employee motivation	5.1	I think sense of personal achievement can motivate me implement 5S system	Adapted and modified from Lukman, Aziz and Zakaria (2009)
	5.2	I think recognition can motivate me implement 5S system	
	5.3	I think growth and promotion can motivate me implement 5S system.	
	5.4	I think responsibility can motivate me implement 5S system	
	5.5	I think opportunity of advancement can motivate me implement 5S system.	

4. Scale Measurement

In this research scales of measurement involved in the statistical analysis can be categorizes into three common groups which is nominal, ordinal and interval scale; these are simply ways to group different types of variables. In part 1 gender, income status and education status, working experience, work area, are belonging to nominal scale, and age and income status belong to ordinal scale. For part 2, this research uses 5-point Likert scale that belong to interval scale measurement.

Table 3 Summary of measurement scale used

Items	Measurement	Scale of Measurement
Gender	Nominal	Dichotomous scale
Age	Ordinal	Category scale
Monthly income	Ordinal	Category scale
Education status	Nominal	Category scale
Working experience	Ordinal	Category scale
Working area	Nominal	Category scale
Employee involvement	Interval	5 – point Likert scale
Training	Interval	5 – point Likert scale
Top management support	Interval	5 – point Likert scale
Organization culture	Interval	5 – point Likert scale
motivation	Interval	5 – point Likert scale

Research tool

The researcher request's advisor examined the questionnaire from the review of relevant documents and related researches and take it to test the validity, and check the suitable wording and language using in order to revise before questioning in the real data collection. Then, the researcher had three experts in the field of Business Administration to authenticate the items in the questionnaires by using the Indexes of Objective Congruence (IOC) scores on a range from -1.000 to 1.000. The three experts include:

1. Dr. Panadda chanphet, Lecturer, Faculty of Management and Tourism, Burapha University.
2. Dr. Dhirajinabhadra Ramdeja, Ph.D., Faculty of Management and Tourism, Burapha University
3. Dr. Pasuta phunyathip, Managing Director, Expertise (Thailand) Co., Ltd. Lecturer, Burapha University.

Any items whose scores are less than 0.5 are revised. In contrast, any items whose scores are equal or higher than 0.5 are retained.

Congruent = 1.000

Questionable = 0.000

Incongruent = -1.000

In order to prove that the questionnaires are applicable to the topic, the formula below is used:

$$IOC = \frac{\sum R}{N}$$

$\sum R$ = Total Expert Opinion Score

N = number of experts

IOC = Consistency between the objective and content or questions and objective

$\sum R$ = Total assessment points given from all qualified experts.

N = Number of qualified experts.

The consistency index value must be at least 0.500 or above to be accepted (Patchanee, 2015). After receiving the assessment results, the questions were modified to ensure that each question has a consistency index value greater than 0.500.

When the researcher edited the questionnaire according to the person have already identified, the researcher will take a set of questionnaires to test the reliability (Reliability Test) by distributing questionnaires to the employees who work in a tire manufacturing company located in eastern region of Thailand online. The data were then analyzed for Cronbach's alpha coefficient (Cronbach, 1970) using a package program and determined the reliability based on coefficient criteria. The Coefficient Cronbach's Alpha should be equivalent to or greater than 0.7 to guarantee the reliability of the research instruments (Pallant, 2013, p. 104). So, the question is plausible.

Table 4 the results of the reliability test of the variables using the alpha coefficient

Variable	Cronbach's Alpha
1.employee involvement	0.909
2. training	0.944
3. top management support	0.947
4. organization culture	0.799
5. employee's motivation in 5S implementation	0.881

Data collection

Data collection method refers to the process of collecting valid data for the target variables in an established systematic fashion. In this research, the research data collection occurred in two phases.

Phase one: Pre-test

The researcher did the pre-test in order to find the reliability of questionnaires by examining Cronbach Alpha. 30 employees that match standard of population from a famous tire company located in the eastern region of Thailand were selected for the pre-test.

Phase two: Questionnaire Distribution

After the validity and reliability of questionnaires had completely been controlled and checked thoroughly, the researcher administered the questionnaires to the people who work in a tire company by survey online. Then they were collected through online by the researcher to analyze and interpret those data until the people who can answer the questionnaire reach to 400 people.

Data processing

1. Prepare a letter requesting permission from an agency that wants to collect information, the Faculty of Management and Tourism will issue a request for permission.

2. Clarify project details to agencies who wish to collect data to inform the informant that this data collection is aimed at studying the factors influencing employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

3. A questionnaire was sent to people who work in a tire company located in eastern region of Thailand, and ask them submit result through online until the participant until 400 persons.

4. The researcher collects all questionnaires from online system and check the completion of each questionnaire. And proceed to the next step.

5. Researcher Bring the information that has been verified for completeness and correctness into the code. And then taken to process to the next statistical package

6. Record the answer code in the questionnaire. To process using a ready-made program SPSS (Statistical Package for Social Science).

Data analysis

After collecting data from Questionnaire completed is the preparation of data for data processing and analysis by using statistical packages by using statistics for data analysis as follows.

1. Descriptive Statistics

Descriptive statistics, including the frequency, percentage, Mean and standard deviation to describe the general nature of the personal data. And research variables in the model.

2. Inferential Statistics

In this study, Person Correlation test and simple Linear Regression is used to determine the strengths and association between the dependent and independent variables.

2.1 Pearson Correlation Coefficient Analysis

Person Correlation test is applied in the study to examine the strength and direction between two variables and is represented by symbol r (Malhora & Peterson, 2006). The coefficient value is always between -1.000 to +1.000. The “+” symbol indicate positive relationship whereas the “-” symbol indicate for negative relationships. The general rule use to interpret the Pearson Correlation analysis is shown below Table 5:

Table 5 Rule of Thumb for Pearson Correlation Analysis

Coefficient Range	Correlation
± 0.910 to ± 1.000	Very Strong
± 0.710 to ± 0.900	High
± 0.410 to ± 0.700	Moderate
± 0.210 to ± 0.400	Small but definite relationship
± 0.000 to ± 0.200	Slight, almost negligible

2.2 Simple linear regression

Simple linear regression is a linear regression model with a single explanatory variable. That is, it concerns two-dimensional sample points with one independent variable and one dependent variable (conventionally, the x and y coordinates in a Cartesian coordinate system) and finds a linear function (a non-vertical straight line) that, as accurately as possible, predicts the dependent variable values as a function of the independent variable. The adjective simple refers to the fact that the outcome variable is related to a single predictor.

Consider the model function:

$$Y = \alpha + \beta X$$

Where Y = employees' motivation in 5S implementation

α = constant

β = Regression coefficient.

X = independent variables.

This research uses the linear regression to test the hypotheses which we proposed in theory section. We can find the relationship between independent and dependent variables from the standardized path coefficient. A higher coefficient of the independent variable means that the influence on the dependent variable is bigger (Pallant, 2010). If the absolute t-value is higher than 1.645 at 95.00% confidential interval (95.00%CI), it means that the independent variable has a statistically significant influence on the dependent variable (Pallant, 2010). While, if the p-value is lower than 0.050 at 95.00% confidential interval (95.00% CI), which indicates that the independent variable has a statistically significant influence on dependent variable (Studenmund, 2006).

Linear simple regression is used to test the relationship between one dependent variable and one independent variable. Based on the model, the research proposed several hypotheses, of which H1 to H4 are required to be examined using linear simple regression.

CHAPTER 4

DATA ANALYSIS

In analyzing data for research study on the factors influencing employees' motivation in 5S implementation in a tire company located in eastern region of Thailand by analyzing the hypothesis of the research. In order for this chapter to be systematic, the researcher has divided this chapter into 2.000 parts as follows:

Part 1 Descriptive statistical analysis

1.1 Analyzing respondents' personal factors

1.2 Analysis of mean and standard deviation on the factors influencing employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Part 2 Inferential analysis to test the hypothesis

2.1 Data analysis to test hypothesis in research with simple regression analysis.

2.2 Summary of hypothesis testing.

The symbol for use in the analysis:

In order to present the analysis results to have a consistent understanding of the symbols used in this research. The researcher has defined symbols used to represent variables and research statistics according to the table 6 as follows:

Table 6 Show symbols used to represent statistics.

The symbol	Meaning
n	The number of samples used for analysis.
\bar{x}	The arithmetic means of the data obtained from the sample.
SD	Sample standard deviation
t	Mean significance test value 2 groups (t-test)
<i>p-value</i>	The probability of accepting the hypothesis
H ₀	Null hypothesis
H ₁	Alternative hypothesis
b	Regression coefficient of predictors in raw scores
β	The regression coefficient of the predictor in standard scores.
R	Correlation coefficient
R ²	Forecasting coefficient
Adjusted R ²	Forecasting coefficient when adjusted
Std. Error	Discrepancy or error
*	Statistical significance level at the.05

Descriptive Analysis

1. Results of analysis on factors of respondents

Table 7 Number and percentage of personal factors information

Personal factor	Number (n = 400)	Percentage
Gender		
male	280	70.00
female	120	30.00
Total	400	100.00

Table 7 (Cont.)

Personal factor	Number (n = 400)	Percentage
Age		
25-29 years	208	52.00
30-39 years	154	38.50
40-50 years	33	8.30
>50 years	5	1.20
Total	400	100.00
Monthly income		
12000-14999 baht	59	14.80
15000-19999 baht	166	41.50
20000-25000 baht	128	32.00
Over than 25000 baht	47	11.70
Total	400	100.00
Education status		
Primary school	5	1.25
High school	212	53.00
College	80	20.00
Bachelor	97	24.25
Above Bachelor	6	1.50
Total	400	100.00
Working experience		
Less than 2 years	84	21.00
More than 2 less than 3 years	112	28.00
More than 3 less than 5 years	95	23.75
More than 5 less than 7 years	80	20.00
More than 7 years	29	7.25
Total	400	100.00

Table 7 (Cont.)

Personal factor	Number (n = 400)	Percentage
Work area		
Production	288	72.00
Sale and marketing	24	6.00
Admin &HR	12	3.00
R&D	15	3.75
SCM &Logistics	19	4.75
IT &engineering	9	2.25
Quality control	8	2.00
Finance	25	6.25
total	400	100.00

From the table 7 data on the number and percentage of respondents show that all respondents 400 people with the following analysis results

Gender

The majority of respondents surveyed that be classified by gender as female 120 people (30.00%) and 280 males (70.00%), respectively.

Age

The majority of respondents surveyed that be classified by age, aged 25-29 years have 208 (52.00%), aged 30-39 years have 154 people (38.50%) and age 40-50 years have 33 people (8.30%), and over than 50 years have 5 people (1.25%), respectively.

Income

The majority of respondents surveyed that be classified by 59 persons (14.80%) between 12000 and 14999 baht group, 166 persons (41.50%) between 15000 and 19999 baht, 128 persons (32.00%) between 20000 and 25000 baht group, and 47 persons (11.70%) belong to over than 25000 baht group.

Education status

The majority of respondents surveyed that be classified by education status, primary school has 5 people (1.25%) , high school has 212 people (53.00%), college has 80 people (20.00%), bachelor has 97 people (24.25%),above bachelor has 6 people (1.50%).

Working experience

The majority of respondents surveyed that be classified by working experience, less than 2 years has 84 people (21.00%), more than 2 years less than 3 years has 112 people (28.00%), more than 3years less than 5 years has 95people (23.75%), more than 5 years less than 7 years has 80 people (20%), more than 7 years has 29 people (7.27%).

Working area

The majority of respondents surveyed that be classified by working area, production has 288 people (72.00%), sale and marketing has 24 people (6.00%), admin and human resource has 12 people (3.00%), R & D has 15 people (3.75%), SCM & Logistics has 19 people (4.75%), IT & Engineering has 9 people (2.25%), Quality control has 8 people (2.00%), finance has 25 people (4.25%).

2. Analysis of mean and standard deviation on factors influencing employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Analysis of mean and standard deviation of factors influencing employees' motivation in 5S implementation in a tire company located in eastern region of Thailand consists of 4 factors: employee involvement, training, top management support and organization culture. Including Mean, standard deviation (SD), along with interpretation criteria as follows:

Mean	Interpretation of results
4.210 - 5.000	Most agree
3.410 - 4.200	Agree
2.610 - 3.400	Moderate

1.810 - 2.600	Less agree
1.000 - 1.800	Least agree

The details are as shown in the table 8 to Table 12 as follows

Table 8 Mean and standard deviation of employee involvement

Employee involvement	\bar{X}	SD	Level	Rank
1. I think top management support of 5S have influence on my involvement to implement 5S system.	3.870	.951	Agree	5
2. I think Department's initiatives have influence on my involvement to implement 5S system.	3.873	.937	Agree	4
3. I think Recognition of 5S have influence on my involvement to implement 5S system	3.930	.904	Agree	2
4. I think passion have influence on my involvement to implement 5S system.	3.878	.930	Agree	3
5. I think facilitator roles have influence on my involvement to implement 5S system	3.935	.890	Agree	1
Total average	3.897	.777	Agree	-

From table 8, it was found that employee involvement factor shows that “I think top management support of 5S have influence on my involvement to implement 5S system.” was the highest ($\bar{X} = 3.935$, $SD = .890$). The second “I think Department's initiatives have influence on my involvement to implement 5S system” ($\bar{X} = 3.930$, $SD = .904$). The third “I think Recognition of 5S have influence on my involvement to implement 5S system” ($\bar{X} = 3.878$, $SD = .930$), followed by “I think passion have

influence on my involvement to implement 5S system.” ($\bar{X} = 3.873$, $SD = .937$). And “I think facilitator roles have influence on my involvement to implement 5S system” ($\bar{X} = 3.870$, $SD = .952$), respectively.

Table 9 Mean and standard deviation of training

Training	\bar{X}	SD	Level	Rank
1. The internal training of other experienced individuals has influence on my motivation to implement 5S system	3.978	.885	Agree	2
2. The internal training of job sharing has influence on my motivation to implement 5S system.	4.000	.881	Agree	1
3. The internal training of task rotation has influence on my motivation to implement 5S system.	3.963	.841	Agree	4
4. The internal training of individual guidance has influence on my motivation to implement 5S system.	3.968	.865	Agree	3
5. The external training of sending employee to 5S system and seminars and workshops has influence on my motivation to implement 5S system.	3.945	.880	Agree	5
Total average	3.971	.770	Agree	-

From the table 9 it was found that training factor shows that “The way of job sharing has influence on the training of 5S.” was the highest ($\bar{X} = 4.000$, $SD = .881$). The second “The way of experienced individuals has influence on the training of 5S”

($\bar{X} = 3.978$, $SD = .885$). The third “The way of individual guidance has influence on the training of 5S” ($\bar{X} = 3.968$, $SD = .865$), followed by the “The way of task rotation has influence on the training of 5S”. ($\bar{X} = 3.963$, $SD = .841$). And “The way of sending employee to 5S system and seminars and workshops has influence on the training of 5S.” ($\bar{X} = 3.945$, $SD = .880$), respectively.

Table 10 Mean and standard deviation of top management support

Top management support	\bar{X}	SD	Level	Rank
1. Top management provides resources for employee have influence on my motivation to implement 5S system.	3.938	.952	Agree	6
2. Top management structural arrangement for employee have influence on my motivation to implement 5S system.	3.985	.895	Agree	3
3. Top management empower employee have influence on my motivation to implement 5S system.	4.010	.873	Agree	1
4. Top management delegating some authorities have influence on my motivation to implement 5S system.	3.955	.880	Agree	5
5. Top management commitment for employees have influence on my motivation to implement 5S system.	3.963	.850	Agree	4
6. Top management guide for employee have influence on my motivation to implement 5S system	3.988	.839	Agree	2
Total average	3.973	.789	Agree	

From Table 10, it was found that top management support factor shows that the question " Top management empower employee have influence on support of 5S implementation." was the highest ($\bar{X} = 4.010$, $SD = .873$). The Second " Top management guide for employees have influence on support of 5S implementation" ($\bar{X} = 3.988$, $SD = .839$), the third "Top management structural arrangement for employee have influence on support of 5S implementation." ($\bar{X} = 3.985$, $SD = .895$). The fourth "Top management commitment for employees have influence on support of 5S implementation" ($\bar{X} = 3.963$, $SD = .850$). Followed by "Top management delegating some authorities have influence on support of 5S implementation" ($\bar{X} = 3.955$, $SD = .880$), and "Top management provides resources for employee have influence on 5S implementation." ($\bar{X} = 3.938$, $SD = .952$), respectively.

Table 11 Mean and standard deviation of organization culture

Organization culture	\bar{X}	SD	Level	Rank
1. I think innovation and courage for employee have influence on my motivation to implement 5S system.	4.055	.911	Agree	2
2. I think employee orientation have influence on my motivation to implement 5S system	3.858	1.010	Agree	4
3. I think team orientation have influence on my motivation to implement 5S system.	4.038	.8768	Agree	3
4. I think paying attention to details have influence on my motivation to implement 5S system.	4.110	.8745	Agree	1
Total average	4.015	.776	Agree	-

From Table 11, it was found that organization culture factor show that the question “I think innovation and courage for employee have influence on my motivation to implement 5S system” ($\bar{X} = 4.110$, $SD = .875$). The second “I think employee orientation have influence on my motivation to implement 5S system;” ($\bar{X} = 4.055$, $SD = .911$). Followed by “I think team orientation have influence on my motivation to implement 5S system”. ($\bar{X} = 4.038$, $SD = .876$), and “I think paying attention to details have influence on my motivation to implement 5S system.” ($\bar{X} = 3.858$, $SD = 1.010$), respectively.

Table 12 Mean and standard deviation of the motivation

Motivation	\bar{X}	SD	Level	Rank
1. I think sense of personal achievement can motivate me implement 5S system	3.958	.915	Agree	5
2. I think recognition can motivate me implement 5S system	3.985	.887	Agree	3
3. I think growth and promotion can motivate me implement 5S system	3.975	.881	Agree	4
4. I think responsibility can motivate me implement 5S system	4.043	.847	Agree	1
5. I think opportunity of advancement can motivate me implement 5S system	4.023	.899	Agree	2
Total average	3.997	.781	Agree	-

From Table 12, it was found that the question “I think responsibility can motivate me implement 5S system” was the highest ($\bar{X} = 4.043$, $SD = .847$). The

second is “I think advancement can motivate me implement 5S system” ($\bar{X} = 4.023$, $SD = .899$). The third is “I think recognition can motivate me implement 5S system.” ($\bar{X} = 3.985$, $SD = .887$), Followed by “I think growth can motivate me implement 5S system.” ($\bar{X} = 3.975$, $SD = .881$), and “I think achievement can motivate me implement 5S system” ($\bar{X} = 3.958$, $SD = .915$), respectively.

Inferential analysis to test the hypothesis

There are four hypotheses in the research study. Simple linear regression analysis is employed to test the hypotheses.

H1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H2: training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Table 13 Summary result of simple linear regression analysis of employee involvement

ANOVA						
Model		Sum of square	df	Mean square	F	<i>p-value</i>
1	Regression	155.127	1	155.127	701.378	.000
	Residual	88.028	398	.221		
	Total	241.155	399			
Coefficients						
		Unstandardized coefficients		Standardized coefficients		
	Model	B	Std. error	Beta	T	<i>p-value</i>
1	(Constant)	0.867	.120		7.197	.000
	Employee involvement	.803	.030	.799	26.484	.000
a. Dependent variable: employee’s motivation in 5S implementation						
b. Predictors: (Constant), employee involvement						
Model summary						
Model	R	R square	Adj. R square		Std. error of the estimate	
1	.799	.638	.637		.47029	

According to Table 13, ANOVA F value is 701.378 with Significance level .000, indicating that the linear regression model established by the independent variable "employee involvement" and the dependent variable "motivation" has extremely significant statistical significance.

From the last column of the regression coefficient significance value = $0.000 < 0.01 < 0.05$, it indicates that the regression coefficient B exists and has statistical significance. The relationship between "employee involvement" and "motivation" are proportional and extremely significant.

From model summary shows that R is 0.799, R Square is 0.638, and R

Square is a statistical measure of how close the data are to the fitted regression line. R Square of is equivalent to 0.638. This shows that 63.80% of the variance on employees' motivation in 5S implementation is explained by employee involvement.

In conclusion, the author accepts H1.

H1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Employees' motivation in 5S implementation = $0.867 + 0.803 \text{ employee involvement}$

Table 14 Summary result of simple linear regression analysis of training.

ANOVA					
Model	Sum of square	df	Mean square	F	<i>p-value</i>
1 Regression	169.080	1	169.080	908.447	.000
Residual	74.076	398	.186		
Total	243.155	399			
Coefficients					
		Unstandardized coefficients		Standardized coefficients	
Model		B	Std. error	Beta	<i>p-value</i>
1	(Constant)	.640	.113		5.640 .000
	Training	.845	.028	.834	30.140 .000
Model summary					
Model	R	R square	Adj. R square	Std. error of the estimate	
1	.834	.695	.695	.43142	

a. Dependent variable: employee's motivation in 5S implementation

b. Predictors: (Constant), training

According to Table 14, ANOVA F value is 908.447 with Significance level .000, indicating that the linear regression model established by the independent variable "training" and the dependent variable "motivation" has extremely significant statistical significance.

From the last column of the regression coefficient significance value = $0.000 < 0.01 < 0.05$, it indicates that the regression coefficient B exists and has statistical significance. The relationship between "training" and "motivation" are proportional and extremely significant.

From model summary shows that R is 0.834, R Square is 0.695, and R Square is a statistical measure of how close the data are to the fitted regression line. R Square of is equivalent to 0.695. This shows that 69.50% of the variance on employees' motivation in 5S implementation is explained by training.

In conclusion, the author accepts H2.

H2: training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Employees' motivation in 5S implementation = $0.64 + 0.845 \text{ training}$

Table 15 Summary result of simple linear regression analysis of top management support.

ANOVA						
Model		Sum of square	dif	Mean square	F	<i>p-value</i>
1	Regression	183.864	1	183.864	1234.203	.000
	Residual	59.291	398	.149		
	Total	243.155	399			

Table 15 (Cont.)

Coefficients						
		Unstandardized		Standardized		
		coefficients		coefficients		
Model		B	Std. error	Beta	T	<i>p-value</i>
1	(Constant)	0.578	.099		5.823	.000
	Top management support	.861	.024	.870	35.131	.000
Model summary						
Model	R	R square	Adj. R square	Std. error of the estimate		
1	.870	.756	.756	.38597		

a. Dependent variable: employee's motivation in 5S implementation

b. Predictors: (Constant), top management support

According to Table 15, ANOVA F value is 1234.203. With Significant level .000, indicating that the linear regression model established by the independent variable "Top management support" and the dependent variable "motivation" has extremely significant statistical significance.

From the last column of the regression coefficient significance value = $0.000 < 0.010 < 0.050$, it indicates that the regression coefficient B exists and has statistical significance. The relationship between "Top management support" and "motivation" are proportional and extremely significant.

From model summary shows that R is 0.870, R Square is 0.756, and R Square is a statistical measure of how close the data are to the fitted regression line. R Square of is equivalent to 0.756. This shows that 75.60% of the variance on employees' motivation in 5S implementation is explained by top management support.

In conclusion, the author accepts H3.

H3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Employees' motivation in 5S implementation = $0.578 + 0.861$ Top management support.

Table 16 Summary result of simple linear regression analysis of organization culture

ANOVA						
Model	Sum of square	dif	Mean square	F	<i>p-value</i>	
1 Regression	165.928	1	165.928	855.136	.000	
Residual	77.227	398	.194			
Total	243.155	399				
Coefficients						
		Unstandardized coefficients	Standardized coefficients			
Model		B	Std. error	Beta	T	<i>p-value</i>
1	(Constant)	0.658	.116		5.663	.000
	Organization culture	.831	.028	.826	29.243	.000
Model summary						
Model	R	R square	Adj. R square	Std. error of the estimate		
1	.826	.682	.682	.44050		

a. Dependent variable: employee's motivation in 5S implementation

b. Predictors: (Constant), organization culture

According to Table 16, ANOVA F value is 855.136. With Significant level .000, indicating that the linear regression model established by the independent variable "organization culture" and the dependent variable "motivation" has extremely significant statistical significance.

From the last column of the regression coefficient significance value = $0.000 < 0.01 < 0.05$, it indicates that the regression coefficient B exists and has statistical significance. The relationship between “organization culture” and “motivation” are proportional and extremely significant.

From model summary shows that R is 0.826, R Square is 0.682, and R Square is a statistical measure of how close the data are to the fitted regression line. R Square of is equivalent to 0.682. This shows that 68.20% of the variance on employees’ motivation in 5S implementation is explained by organization culture.

In conclusion, the author accepts H4.

H4: organization culture has a significantly effect on employees’ motivation in 5S implementation in a tire company located in eastern region of Thailand.

Employees’ motivation in 5S implementation = $0.658 + 0.831$ organization culture.

The equation indicates that employee involvement, training, top management support and organization culture are all have a significantly effect on employees’ motivation in 5S implementation in a tire company located in eastern region of Thailand.

Summary of hypothesis testing

Research results on “the factors influencing on employees’ motivation in 5S implementation in a tire company located in eastern region of Thailand “summarize the hypothesis test results as shown in Table 17.

Table 17 Summary of hypothesis testing

Hypothesis	Results
Hypothesis1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.	Supported Hypothesis
Hypothesis2: training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.	Supported Hypothesis
Hypothesis3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.	Supported Hypothesis
Hypothesis4: organization culture had a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.	Supported Hypothesis

From Table 17, the results of hypothesis testing are summarized as follows:

Hypothesis 1 employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis 2 Training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis 3 Top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Conclusion

In summary, this chapter has discussed about the results of the various data analysis techniques that have been conducted in this study using both the SPSS software. The chapter 5 will be discussing about the overall summary of the findings, the implications and limitations of the study, as well as some of the suggestions for the future studies.



CHAPTER 5

SUMMARY AND DISCUSSION

This research study is about factors influencing on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. This chapter demonstrates the conclusion of the findings from the data analysis and results of chapter four. The author tests the hypotheses of the study by employing quantitative method. The total respondents of this study are 400.000. This chapter is designed as follows:

1. Summary of statistical analysis
2. Discussion of research findings
3. Limitations of the study
4. Recommendations from the result of this research
5. Recommendations for future research

Summary of statistical analysis

The variables

There are five variables in this research study: 1) employee involvement 2) training, 3) top management support, 4) organization culture 5) employees' motivation in 5S implementation.

Demographical characteristics of respondents

There are 400 respondents for this research study. 228.000 of them are male, and 172 of them are female. 208 of them are between 25-29 years old. 154 of them are between 30-39 years old, 33 of them are between 40-50 years old, and 5 of them are more than 50 years old. 59 respondents earn more than 12000 less than 14999 baht. 166 of them earn between 15000-19999 baht monthly. 128 respondents earn between 20000-25000 baht per month. 47 of them earn more than 25000 baht per month. Education status primary school has 5 people, high school has 212 people, college has 80 people, bachelor has 97.000 people, and above bachelor has 6 people. Work experience less than 2 years has 84 people, more than 2 years less than 3 years has 112.000 people, more than 3 years less than 5 years has 95 people, more than 5

years less than 7 years has 80.000 people, more than 7 years has 29 people. Production has 288 people, sale and marketing has 24 people, admin and human resource has 12 people, R & D has 15 people, SCM & Logistics has 19 people, IT & Engineering has 9 people, Quality control has 8 people, finance has 25 people.

Level of independent variables

For the level of respondents' employee involvement on employees' motivation in 5S implementation, the results showed that the respondents had the agree level of employee involvement on employees' motivation in 5S implementation. In the details of employee involvement dimension, it was found that all components of employee involvement are in agree level. The ranking from the highest mean to the lowest mean is 3.935, 3.930, 3.878, 3.873, and 3.870, respectively.

For the level of respondents' training on employees' motivation in 5S implementation, the results showed that the respondents had the agree level of training on employees' motivation in 5S implementation. In the details of training dimension, it was found that all components of training are also in the agree level. The ranking from the highest mean to the lowest mean is 4.000, 3.978, 3.968, 3.963 and 3.945, respectively.

For the level of respondents' top management support on employees' motivation in 5S implementation, the results showed that the respondents had the agree level of top management support on employees' motivation in 5S implementation. In the details of top management support dimension, it was found that all components of top management support are also in the agree level. The ranking from the highest mean to the lowest mean is 4.010, 3.988, 3.985, 3.963, 3.955, and 3.938, respectively.

For the level of respondents' organization culture on employees' motivation in 5S implementation, the results showed that the respondents had the agree level of organization culture on employees' motivation in 5S implementation. In the details of organization culture dimension, it was found that all components of organization culture are also in the agree level. The ranking from the highest mean to the lowest mean is 4.110, 4.055, 4.038, and 3.858, respectively.

The hypotheses

There are four hypotheses in this research study.

H1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H2: training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

H3: top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand;

H4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand;

Hypothesis 1: employee involvement has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

The simple regression analysis in chapter 4 supports hypothesis 1. Table 13 illustrates that the p-value of employee involvement and on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand is 0.000, and the B value is 0.803. In other words, employee involvement has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Comparing B value with other variables, the author finds that employee involvement is the last significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis 2: Training has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

The simple regression analysis in chapter 4 supports hypothesis 2. Table 14 illustrates that the p-value of training and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand is 0.000, and the B value is 0.845. In other words, training has significant influenced on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Comparing B value with other variables, the author finds that training has the second significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis 3: Top management support has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand;

The simple regression analysis in chapter 4 supports hypothesis 3. Table 15 illustrates that the p-value of top management support and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand is 0.000, and the B value is 0.861. In other words, top management support has significant effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Comparing B value with other variables, the author finds that top management support has the most significant effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Hypothesis 4: organization culture has a significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand;

The simple regression analysis in chapter 4 supports hypothesis 4. Table 16 illustrates that the p-value of organization culture and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand is 0.000, and the B value is 0.831. In other words, organization culture has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Comparing B value with other variables, the author finds that organization culture has the third significant effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Discussion of research findings

Objective 1: To investigate the effect of employee involvement on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

According to Table 8 the average mean of employee involvement is 3.897, which is high level. In a word, there is high level between employee involvement and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Simple regression analysis results support hypothesis 1 that employee involvement has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. It has the forth significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand, if comparing to other three independent variables of this research. Employee involvement includes I think top management support of 5S have influence on my involvement to implement 5S system, I think department's initiatives have influence on my involvement to implement 5S system, I think recognition of 5S have influence on my involvement to implement 5S system, I think passion have influence on my involvement to implement 5S system, I think facilitator roles have influence on my involvement to implement 5S system. It was also found that employee involvement have significant influence on employees' motivation.

(Zulkarnain & SitiHawa, 2019; Abnas & Yasir, 2013, Fernández-Salinero, Collantes, Cifuentes, & Topa, 2020)

Objective 2: To investigate the effect of training on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

According to Table 9 the average mean of training is 3.971, which is high level. In a word, there is high level between training and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand

What's more, Simple regression analysis results support hypothesis 2 that training has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. It has the second significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand, if comparing to other three independent variables of this research. Training includes The internal training of other experienced individuals has influence on my motivation to implement 5S system, The internal training of job sharing has influence on my motivation to implement 5S system, The internal training of task rotation has influence on my motivation to implement 5S system, The internal training of individual guidance has influence on my motivation to implement 5S system, The external training of sending employee to 5S system and seminars and workshops has influence on my motivation to implement 5S system. The findings

agrees with Abdullah and Djebavni (2011) who identified that trained employees are more motivated with their jobs as opposed to the untrained employees. It was also found that training have significant influence on employees' motivation. (Khan, Ahmad, Iqbal, & Haider, 2014, Güllü, 2016, Siswoyo, 2020)

Objective 3: To investigate the effect of top management support on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

According to Table 10 the average mean of top management support is 3.973, which is high level. In a word, there is high level between top management support and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Base on the Simple regression analysis results of hypothesis 3 the author found that top management support has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. It has the most significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand, if comparing to other three independent variables of this research. Top management support includes Top management provides resources for employee have influence on my motivation to implement 5S system, Top management structural arrangement for employee have influence on my motivation to implement 5S system, Top management empower employee have influence on my motivation to implement 5S system, Top management delegating some authorities have influence on my motivation to implement 5S system, Top management commitment for employees have influence on my motivation to implement 5S system, Top management guide for employee have influence on my motivation to implement 5S system. It was also found that top management support have significant influence on employees' motivation (Ahmed, Shad, Mumtaz, & Tanveer, 2012; Kim & Brymer, 2011; Chinomona, Popoola, & Imuezerua, 2016)

Objective 4: To investigate the effect of organization culture on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

According to Table 11 the average mean of organization culture is 4.015, which is high level. In a word, there is high level between organization culture and employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

According to simple regression analysis, the researcher found that organization culture has significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. It has the third significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand, if comparing to other variables of this research. Organization culture includes I think innovation and courage for employee have influence on my motivation to implement 5S system, I think employee orientation have influence on my motivation to implement 5S system, I think team orientation have influence on my motivation to implement 5S system, I think paying attention to details have influence on my motivation to implement 5S system. It was also found that organization culture have significant influence on employees' motivation (Noni, Norridzwan, & Maznah, 2011; Zulkarnain & SitiHawa, 2019; Ida Uliyah & Setyo, 2021)

In a summary, employee involvement, training, top management support and organization culture have significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. Top management support has the most significantly effect following by training and organization culture while employee involvement has the least significantly effect on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand.

Limitations of the study

There are few limitations relate and revealed in this research.

Firstly, the sample is selected from a tire manufacturing company in eastern region of Thailand which cannot represent the whole tire manufacturing company of Thailand, so the study may not represent the whole view of employees' motivation in tire manufacturing company of Thailand.

The second, the study survey the factors online, so the real meaning of respondent may not know exactly, regardless whether the respondent express themselves actually or not.

The third, the time of this research are work time, so the respondent feedback the survey as soon as possible. If they answer the questionnaire on holiday time, perhaps the survey results have little difference.

Recommendations from the result of this research

The present study concludes that employee involvement, training, top management support, organization culture have a significant influence on employees' motivation in 5S implementation in a tire company located in eastern region of Thailand. In addition, top management support has the most significant effect following by training, organization culture while employee involvement has the least significant influence on employees' motivation in 5S implementation.

The top management of Tire Company should understand that top management support is the most significant factor influencing employee's motivation even though other factors also have significant influence. So the top management of the company should empower the lean management division to learn the requirement of employees to support employees to implement 5S system in the company. By this way the company can gain benefit and make full use of the results to improve policies and program regarding 5S System.

The lean management division of the tire company should select internal training of job sharing to motivate employees to take part in 5S system implementation. By this way the company will develop continuous improvement and manage hygiene effectively and efficiently.

The manager of the department should act their facilitator roles of 5S implementation to motivate employee to involve 5S system because their facilitator roles has high level influence on employee motivation.

The human resource department should develop the paying attention to details as organization culture for 5S and be responsible for motivating employee to implement 5S system.

Recommendations for future research

Based on the results of this study, it is hoped that the results of the present study have contributed valuable information to the future researchers.

Firstly, it is expected that the feedback of the present study will give an actual scenario on the problems faced by manufacturing firms regarding employees' motivation in implementing 5S System.

Secondly, future researchers can use the study's findings as their future reference on employees' motivation. Although there are some limitations, it is hoped that the first step taken in studying the factors influencing employees' motivation in implementing 5S System is significant for further justification.

Thirdly, the results of this study are based on a tire company located in eastern region of Thailand, so future researchers can select other type of manufacturing company to research whether can get the same conclusion which are same with the tire company. Future researchers are suggested to select larger sample size in future studies in order to obtain more valuable data and findings.

Lastly, future researchers are also advised to conduct mixed mode research study rather than quantitative study alone if time permits so that more precise and in-depth information can be collected from the respondents which in turn will help to develop more reliable research instruments to examine the barrier factors affecting employees' motivation in 5S implementation in company located in eastern region of Thailand.

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APPENDICES



APPENDIX 1

Questionnaire (English version)

THE FACTORS INFLUENCING EMPLOYEE'S MOTIVATION IN IMPLEMENTING 5S SYSTEM

PART 1 : General data

Statement Please mark "X" into the box () to match the reality.

1. GENDER:

() Female () Male

2. AGE:

() 25-29 () 30-39
() 40-50 () >50

3. EDUCATION STATUS:

() Primary school_ () High school
() College () Bachelor
() Above Bachelor

4. INCOME:

() 12000-15000 THB () 15000-20000 THB
() 20000-25000 THB () OVER 25000

5. WORK AREA

() Production () Finance
() Sale and marketing () Admin
() R & D () Logistics
() IT () Customer service

6. WORKING EXPERIENCE

() less than 2 year () 2-3 years
() 3-5 years () 5-7 years
() above 7 years

Statement Please mark “X” into the box “()” that you have the opinion that it is the only one that matches you the most. By setting the scoring criteria as follows:

Set to 1 points equal to = Strong disagree

Set to 2 points equal to = Disagree

Set to 3 points equal to = Neutral

Set to 4 points equal to = Agree

Set to 5 point equal to = Strong agree

Question	Answer level				
	1	2	3	4	5
PART 2 Employee involvement for 5S adapted from Geots and Davis (2010) Werner and DeSimone (2009) Hassan, Argia and Aziah (2013)					
1.1 I think top management support of 5S have influence on my involvement to implement 5S system.					
1.2 I think department's initiatives have influence on my involvement to implement 5S system.					
1.3 I think recognition of 5S have influence on my involvement to implement 5S system.					
1.4 I think passion have influence on my involvement to implement 5S system.					
1.5 I think facilitator roles have influence on my involvement to implement 5S system.					
PART 2 The ways of training for 5S adapted from Khamis et al. (2009)					
2.1 The internal training of other experienced individuals has influence on my motivation to implement 5S system.					
2.2 The internal training of job sharing has influence on my motivation to implement 5S system.					

Question	Answer level				
	1	2	3	4	5
2.3 The internal training of task rotation has influence on my motivation to implement 5S system.					
2.4 The internal training of individual guidance has influence on my motivation to implement 5S system.					
2.5 The external training of sending employee to 5S system and seminars and workshops has influence on my motivation to implement 5S system.					
PART 3 top management support adapted from Boonstra (2013)					
3.1 Top management provides resources for employee have influence on my motivation to implement 5S system.					
3.2 Top management structural arrangement for employee have influence on my motivation to implement 5S system.					
3.3 Top management empower employee have influence on my motivation to implement 5S system.					
3.4 Top management delegating some authorities has influence on my motivation to implement 5S system.					
3.5 Top management commitment for employees have influence on my motivation to implement 5S system.					
3.6 Top management guide for employee have influence on my motivation to implement 5S system.					

Question	Answer level				
	1	2	3	4	5
PART4. Elements of organizational culture adapted from Robbins, and Judge (2013)					
4.1 I think innovation and courage for employee have influence on my motivation to implement 5S system.					
4.2 I think employee orientation have influence on my motivation to implement 5S system					
4.3 I think team orientation have influence on my motivation to implement 5S system.					
4.4 I think paying attention to details have influence on my motivation to implement 5S system.					
PART5. Employee motivation adapted from Lukman, Aziz and Zakaria (2009)					
5.1 I think sense of personal achievement can motivate me implement 5S system					
5.2 I think recognition can motivate me implement 5S system					
5.3 I think growth and promotion can motivate me implement 5S system.					
5.4 I think responsibility can motivate me implement 5S system					
5.5 I think opportunity of advancement can motivate me implement 5S system.					



APPENDIX 2

IOC Result

IOC Validity test:

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
PART 1						
1. General data						
1. GENDER	+1	+1	+1	3	1	Yes
2. AGE	+1	+1	+1	3	1	Yes
3. EDUCATION STATUS	+1	+1	+1	3	1	Yes
4. INCOME STATUS	+1	+1	+1	3	1	Yes
5. WORK AREA	+1	+1	+1	3	1	Yes
6. WORKING EXPERIENCE	+1	+1	+1	3	1	Yes
PART 2						
1. Employee involvement for 5S adapted from Geots and Davis (2010) Werner and Demimonde (2009) Hassan, Argia and Aziah (2013);						
1.1 I think top management support of 5S have influence on my involvement to implement 5S system.	+1	+1	+1	3	1	Yes
1.2 I think Department's initiatives have influence on my involvement to implement 5S system.	+1	+1	+1	3	1	Yes
1.3 I think Recognition of 5S have influence on my involvement to implement 5S system.	+1	+1	+1	3	1	Yes

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
1.4 I think passion have influence on my involvement to implement 5S system.	+1	0	+1	2	0.67	Yes
1.5 I think facilitator roles have influence on my involvement to implement 5S system.	+1	0	+1	2	0.67	Yes
1.6 I think being forced have influence on my involvement to implement 5S system.	0	0	+1	1	0.33	NO
PART 2 The ways of training for 5S Adapted from Khakis et al. 2009						
2.1 The way of experienced individuals has influence on the training of 5S.	+1	0	+1	2	0.67	Yes
2.2 The way of having commitment in the project has influence on the training of 5S.	0	0	+1	1	0.33	NO
2.3 The way of job sharing has influence on the training of 5S.	+1	+1	+1	3	1	Yes
2.4 The way of task rotation has influence on the training of 5S.	+1	+1	+1	3	1	Yes

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
2.5 The way of individual guidance has influence on the training of 5S.	+1	+1	+1	3	1	Yes
2.6 The way of sending employee to 5S system and seminars and workshops has influence on the training of 5S.	+1	+1	+1	3	1	Yes
PART 3 top management support adapted from Boonstra (2013)						
3.1 Top management provides resources for employee have influence on 5S implementation	+1	+1	+1	3	1	Yes
3.2 Top management structural arrangement for employee have influence on support of 5S implementation	+1	+1	+1	3	1	Yes
3.3 Top management empower employee have influence on support of 5S implementation	+1	+1	+1	3	1	Yes

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
3.4 Top management delegating some authorities have influence on support of 5S implementation;	+1	+1	+1	3	1	Yes
3.5 Top management commitment for employees have influence on support of 5S implementation;	+1	+1	+1	3	1	Yes
3.6 Top management guide for employees have influence on support of 5S implementation;	+1	+1	+1	3	1	Yes
PART 4 Elements of organizational culture adapted from Robbins and Judge (2013)						
4.1 I think innovation and courage for employee have influence on my motivation for 5S system	+1	+1	+1	3	1	Yes
4.2 I think employee orientation have influence on my motivation to implement 5S system	+1	+1	+1	3	1	Yes

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
4.3 I think team orientation have influence on my motivation to implement 5S system.	+1	+1	+1	3	1	Yes
4.4 I think result orientation have influence on my motivation to implement 5S system.	+1	-1	+1	1	0.33	NO
4.5 I think paying attention to details have influence on my motivation to implement 5S system.	+1	+1	+1	3	1	Yes
PART 5 Employee motivation adapted from Lukman, Aziz and Zakaria (2009)						
5.1 I think achievement can motivate me implement 5S system	+1	+1	+1	3	1	Yes
5.2 I think recognition can motivate me implement 5S system	+1	+1	+1	3	1	Yes
5.3 I think growth can motivate me implement 5S system.	+1	+1	+1	3	1	Yes
5.4 I think responsibility can motivate me implement 5S system	+1	+1	+1	3	1	Yes

Questionnaire	(Comment of Professional)			(Total)	IOC Value	Result
	1. Dr. Panadda	2. Dr.Dhira	3. Dr. Chery			
5.5 I think advancement can motivate me implement 5S system	+1	+1	+1	3	1	Yes

Part 1 to Part 5 I send to three professors for Content validity test IOC of the questionnaire:

Dr. Panadda Chanphet, Lecturer, Faculty of Management and Tourism, Burapha University

Dr. Dhirajinabhadra Ramdeja, Ph.D., Faculty of Management and Tourism, Burapha University

Dr. Pasuta phunyathip, Managing Director, Expertise (Thailand) Co., Ltd. Lecturer, Burapha University.

The evaluation making according to the assessment scale in the table. Into the square that matches opinion level ready to give suggestions as below:

Consistent score equal to +1

Not sure score equal to 0

No consistency score equal to -1

Base on the data collected from professors, the formula of calculate IOC value is:

$$IOC = \frac{\sum R}{N}$$

$$\begin{aligned} \sum R &= \text{Accumulate all points' professors} \\ N &= \text{the Head count of Professors} \end{aligned}$$

The result of this content validity test IOC of the questionnaire base on the IOC value, if the IOC value over than 0.5, it means the questionnaire pass the validity test;

The reliability of the questionnaire is tested according to Cronbach's Alpha measurements. Reliability analysis was performed for all the selected significant

items within factor. According to the Cronbach's Alpha testing results, values of all variables are more than .70, which indicate employee involvement is .909, training is .944, top management support is .947, organization culture is .799, motivation is .881





APPENDIX 3

Ethic Approval

สำเนา

ที่ IRB4-172/2564



เอกสารรับรองผลการพิจารณาจริยธรรมการวิจัยในมนุษย์
มหาวิทยาลัยบูรพา

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาโครงการวิจัย

รหัสโครงการวิจัย : G-HU135/2564

โครงการวิจัยเรื่อง : THE FACTORS INFLUENCING EMPLOYEE'S MOTIVATION IN 5S IMPLEMENTATION

หัวหน้าโครงการวิจัย : MR.BO QINGFU

หน่วยงานที่สังกัด : คณะการจัดการและการท่องเที่ยว

คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา ได้พิจารณาแล้วเห็นว่า โครงการวิจัยดังกล่าวเป็นไปตามหลักการของจริยธรรมการวิจัยในมนุษย์ โดยที่ผู้วิจัยเคารพสิทธิและศักดิ์ศรีในความเป็นมนุษย์ไม่มีการล่อลวงเมตลิตี สวัสดิภาพ และไม่ก่อให้เกิดอันตรายแก่ตัวผู้วิจัยและผู้เข้าร่วมโครงการวิจัย

จึงเห็นสมควรให้ดำเนินการวิจัยในขอบข่ายของโครงการวิจัยที่เสนอได้ (ดูตามเอกสารตรวจสอบ)

1. แบบเสนอเพื่อขอรับการพิจารณาจริยธรรมการวิจัยในมนุษย์ ฉบับที่ 1 วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564
2. เอกสารโครงการวิจัยฉบับภาษาไทย ฉบับที่ 1 วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564
3. เอกสารชี้แจงผู้เข้าร่วมโครงการวิจัย ฉบับที่ 1 วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564
4. เอกสารแสดงความยินยอมของผู้เข้าร่วมโครงการวิจัย ฉบับที่ 1 วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564
5. เอกสารแสดงรายละเอียดเครื่องมือที่ใช้ในการวิจัยซึ่งผ่านการพิจารณาจากผู้ทรงคุณวุฒิแล้ว หรือชุดที่ใช้เก็บข้อมูลจริงจากผู้เข้าร่วมโครงการวิจัย ฉบับที่ 1 วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564
6. เอกสารอื่น ๆ (ถ้ามี) ฉบับที่ วันที่ เดือน พ.ศ.

วันที่รับรอง : วันที่ 6 เดือน กรกฎาคม พ.ศ. 2564

วันที่หมดอายุ : วันที่ 6 เดือน กรกฎาคม พ.ศ. 2565

ลงนาม นางสาวพิมพ์พรณ เลิศล้ำ

(นางสาวพิมพ์พรณ เลิศล้ำ)

ประธานคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ มหาวิทยาลัยบูรพา

ชุดที่ 4 (กลุ่มมนุษยศาสตร์และสังคมศาสตร์)

